

## REMARKS

In paragraph 1 of the Office Action the disclosure is objected to because of the following informalities: Serial Number of an US application Number in page 10, line 16 is missing. Responsive hereto, Applicant has amended the application to include the serial number of the U.S. patent application, and Applicant submits that this ground of objection has thereby been satisfied.

In paragraphs 2 and 3 of the Office Action claims 1-3, 6, 9-11 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Macken et al (U5. 2004/0075944 A1), stating:

“Macken et al discloses a magnetic head 50 having a read head portion (12, 68, 66, 57, 60, 64 and 52) including a insulation base coat layer 52; a write head portion (12, 16, 58, 72, 54, 73, 18', 22) including insulation layers (73 and 18'); and wherein the insulation layer 18' of the write head portion having a negative thermal expansion characteristics (abstract, lines 3-6) as set forth in claims 1, 6, 9 and 15.

(Notes that Applicant claims ‘one or more insulation layers that are optional and, if present, are disposed between the read-head portion and the write-head portion’ (emphasis added) in claims 1 and 9 are excluded from the consideration because claims 1 and 9 assert that they are “optional”.

Regarding claims 2 and 10, Macken et al discloses that the negative thermal expansion material is selected from either Zirconium tungstun or hafnium tungstun (see 0034)).

Regarding claims 3 and 11, Macken et al discloses that the insulation layer that includes the negative thermal expansion material is a coil insulation layer 18' within the write-head portion.”

Responsive hereto, Applicant has amended claim 1, including limitations previously set forth in dependent claim 2, and Applicant submits that amended independent claim 1 recites limitations that are not taught by the cited prior art.

Applicant agrees with the Examiner's analysis of the prior art that Macken et al. teaches the use of insulation layers that have negative thermal expansion characteristics. However, Applicant's invention, as set forth in the specification and in prior dependent claim 2, includes materials having negative thermal expansion characteristics that are not taught by the cited prior art. These materials, as previously recited in dependent claim 2 and now recited in amended independent claim 1, are carbon fiber, carbon fiber in an epoxy matrix, carbon fiber in a photoresist matrix, zirconium tungsten in an epoxy matrix, zirconium tungsten in a photoresist

matrix, hafnium tungsten in an epoxy matrix, and hafnium tungsten in a photoresist matrix. Applicant respectfully submits that these materials are not taught by the cited prior art, and that this ground of rejection of independent claim 1 has thereby been satisfied by this amendment.

With regard to independent claims 6, 9 and 15, they have likewise been amended to recite these materials having negative thermal expansion characteristics that are not taught by the cited prior art.

With regard to dependent claims 2 and 10, limitations therefrom have been placed within independent claims 1 and 9 respectively (as discussed hereabove) and dependent claims 2 and 10 have been cancelled.

With regard to dependent claims 3 and 11, Applicant submits that these claims are allowable in that they depend from an allowable base claim.

In paragraphs 4 and 5 of the Office Action claims 5, 8, 13-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macken et al in view of Kudo et al (US. 2003/0193756 A1), stating:

“Macken et al does not disclose a heat transfer layer as recited in claims 5, 8, 13- 14 and 17. Kudo et al discloses a slider having a magnetic head including a heat transfer layer 4.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the magnetic head of Macken et al with a heat transfer layer as set forth, supra as taught by Kudo et al.

The rationale is as follows: One of ordinary skill in the art would have been motivated to provide the magnetic head of Macken et al with a heat transfer layer as set forth, supra as taught by Kudo et al to dissipate the heat generated in the magnetic head/slider and a temperature rise can be inhibited, thus improve the read/write output characteristics of the head.”

Responsive hereto, Applicant notes that the rejected claims are all dependent claims. Applicant asserts that these claims are now allowable in that they depend, either directly or indirectly, from an allowable amended independent base claim.

In paragraph 6 of the Office Action claims 4, 7, 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macken et al in view of Santini (US. 6,560,853 B1), stating:

“Macken et al discloses only a single layer of coils. Macken et al, however, does not disclose two layers of inductive coils as recited in claims 4, 7, 12 and 16.

Santini discloses a magnetic head having a write head portion including two layers of inductive coils (212, 214) and at least an insulation layer (11-14) disposed between the induction coil layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify one layer coils of the write head of Macken et al with two layers of coils as set forth, supra as taught by Santini.

The rationale is as follows: One of ordinary skill in the art would have been motivated to modify one layer coils of the write head of Macken et al with two layers of coils as set forth, supra as taught by Santini because two smaller diameter coils can produce the same flux density as a single coil, with less reluctance; wherein, less reluctance permits a faster rise time of the signal which results in a faster data rate, thus provide a better write characteristics of the write head.”

Responsive hereto, Applicant notes that the rejected claims are all dependent claims. Applicant asserts that these claims are now allowable in that they depend, either directly or indirectly, from an allowable amended independent base claim.

Having responded to all of the paragraphs of the Office Action, and having amended the claims accordingly, Applicant respectfully submits that the Application is now in condition for allowance. Applicant therefore respectfully requests that a Notice of Allowance be forthcoming

at the Examiner's earliest opportunity. Should the Examiner have any questions or comments with regard to this amendment, a telephonic conference at the number set forth below is respectfully requested.

Respectfully submitted,



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**CERTIFICATE OF MAILING (37 CFR 1.8(a))**

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited on September 29, 2005 with the U.S. Postal Service as first class mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: September 29, 2005

  
Patricia Beilmann